

BTK Antibody
Rabbit Polyclonal Antibody
Catalog # ALS13657**Specification**

BTK Antibody - Product Information

Application	WB, IHC
Primary Accession	Q06187
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	76kDa KDa

BTK Antibody - Additional Information**Gene ID** 695**Other Names**

Tyrosine-protein kinase BTK, 2.7.10.2, Agammaglobulinemia tyrosine kinase, ATK, B-cell progenitor kinase, BPK, Bruton tyrosine kinase, BTK, AGMX1, ATK, BPK

Target/Specificity

Human Btk. Predicted cross-reactivity based on amino acid sequence homology: mouse (97%), rat (97%), bovine (98%).

Reconstitution & Storage

Aliquot and store at -20°C. Minimize freezing and thawing.

Precautions

BTK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

BTK Antibody - Protein Information**Name** BTK**Synonyms** AGMX1, ATK, BPK**Function**

Non-receptor tyrosine kinase indispensable for B lymphocyte development, differentiation and signaling (PubMed:19290921). Binding of antigen to the B-cell antigen receptor (BCR) triggers signaling that ultimately leads to B-cell activation (PubMed:19290921). After BCR engagement and activation at the plasma membrane, phosphorylates PLCG2 at several sites, igniting the downstream signaling pathway through calcium mobilization, followed by activation of the protein kinase C (PKC) family members (PubMed:11606584). PLCG2 phosphorylation is performed in close cooperation with the adapter protein B-cell linker protein

BLNK (PubMed:[11606584](http://www.uniprot.org/citations/11606584)). BTK acts as a platform to bring together a diverse array of signaling proteins and is implicated in cytokine receptor signaling pathways (PubMed:[16517732](http://www.uniprot.org/citations/16517732), PubMed:[17932028](http://www.uniprot.org/citations/17932028)). Plays an important role in the function of immune cells of innate as well as adaptive immunity, as a component of the Toll-like receptors (TLR) pathway (PubMed:[16517732](http://www.uniprot.org/citations/16517732)). The TLR pathway acts as a primary surveillance system for the detection of pathogens and are crucial to the activation of host defense (PubMed:[16517732](http://www.uniprot.org/citations/16517732)). Especially, is a critical molecule in regulating TLR9 activation in splenic B-cells (PubMed:[16517732](http://www.uniprot.org/citations/16517732), PubMed:[17932028](http://www.uniprot.org/citations/17932028)). Within the TLR pathway, induces tyrosine phosphorylation of TIRAP which leads to TIRAP degradation (PubMed:[16415872](http://www.uniprot.org/citations/16415872)). BTK also plays a critical role in transcription regulation (PubMed:[19290921](http://www.uniprot.org/citations/19290921)). Induces the activity of NF- κ B, which is involved in regulating the expression of hundreds of genes (PubMed:[19290921](http://www.uniprot.org/citations/19290921)). BTK is involved on the signaling pathway linking TLR8 and TLR9 to NF- κ B (PubMed:[19290921](http://www.uniprot.org/citations/19290921)). Acts as an activator of NLRP3 inflammasome assembly by mediating phosphorylation of NLRP3 (PubMed:[34554188](http://www.uniprot.org/citations/34554188)). Transiently phosphorylates transcription factor GTF2I on tyrosine residues in response to BCR (PubMed:[9012831](http://www.uniprot.org/citations/9012831)). GTF2I then translocates to the nucleus to bind regulatory enhancer elements to modulate gene expression (PubMed:[9012831](http://www.uniprot.org/citations/9012831)). ARID3A and NFAT are other transcriptional target of BTK (PubMed:[16738337](http://www.uniprot.org/citations/16738337)). BTK is required for the formation of functional ARID3A DNA-binding complexes (PubMed:[16738337](http://www.uniprot.org/citations/16738337)). There is however no evidence that BTK itself binds directly to DNA (PubMed:[16738337](http://www.uniprot.org/citations/16738337)). BTK has a dual role in the regulation of apoptosis (PubMed:[9751072](http://www.uniprot.org/citations/9751072)).

Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein. Nucleus Membrane raft {ECO:0000250|UniProtKB:P35991}. Note=In steady state, BTK is predominantly cytosolic. Following B-cell receptor (BCR) engagement by antigen, translocates to the plasma membrane through its PH domain Plasma membrane localization is a critical step in the activation of BTK. A fraction of BTK also shuttles between the nucleus and the cytoplasm, and nuclear export is mediated by the nuclear export receptor CRM1.

Tissue Location

Predominantly expressed in B-lymphocytes.

Volume

50 μ l

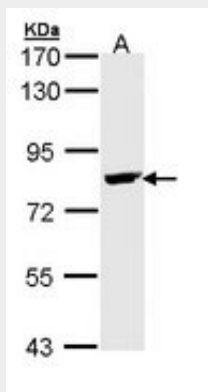
BTK Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

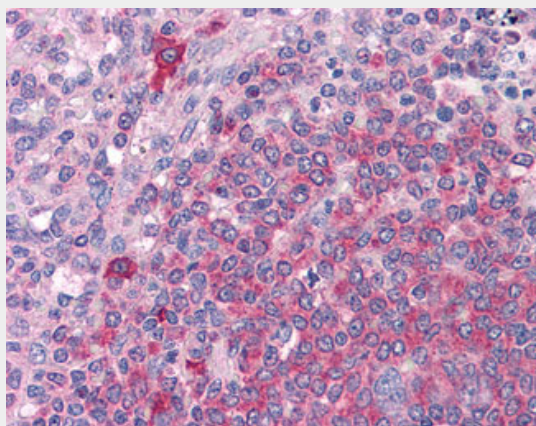
- [Western Blot](#)

- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

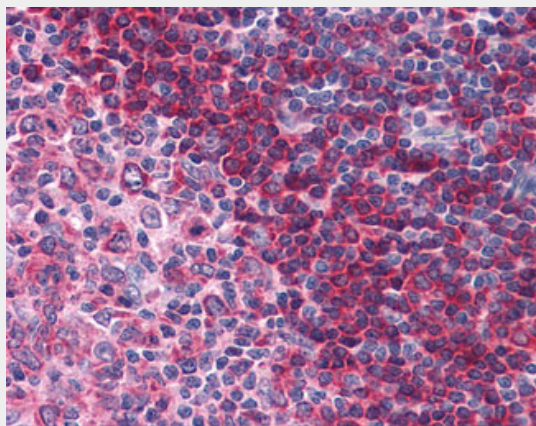
BTK Antibody - Images



Sample (30 ug of whole cell lysate). A: Raji. 7.5% SDS PAGE. BTK antibody diluted at 1:5000.



Anti-BTK antibody IHC of human spleen.



Anti-BTK antibody IHC of human tonsil.

BTK Antibody - Background

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BTK Antibody - References

- Vetrie D.,et al.Nature 361:226-233(1993).
Vetrie D.,et al.Nature 364:362-362(1993).
Ohta Y.,et al.Proc. Natl. Acad. Sci. U.S.A. 91:9062-9066(1994).
Rohrer J.,et al.Immunogenetics 40:319-324(1994).
Hagemann T.L.,et al.Hum. Mol. Genet. 3:1743-1749(1994).